

REMARKS

The present invention relates to a process for making rapidly dissolving and dispersing dosage forms, particularly orally consumable films, for the delivery of pharmaceutically active agents with the dosage forms so obtained.

After the present amendments, the claims pending in this application number 1-13. Claims 14-29 have been withdrawn from consideration by the Examiner. Claim 1 has been amended to stipulate the hydrated polymer composition comprises pullulan and sodium alginate having a relatively high viscosity suitable for casting. Claim 1 has also been amended to stipulate the dosage form is dried under conditions that provide a form which gives a solution of relatively low viscosity that rapidly dissolves and disperses in the mouth. Such amendments are supported in the specification at page 3, lines 1-2 and 12-16; page 4, lines 16-22 and at page 5, lines 19-21. Claims 4 and 5 have been amended to exclude aspartame as a non-volatile agent. By such amendments, Applicants have simply re-drawn their claim boundaries to avoid any accidental overlap with prior art. It is believed no new matter has been added by the present amendments.

Claim 1 has been rejected as being anticipated by Mori et al. (DE 2737947 Abstract Only). The rejection is traversed.

In a previous response filed in the instant application, Applicants provided the Examiner with an English language counterpart of the **full disclosure**, i.e., GB1559644 of Mori et al. along with an Information Disclosure Statement. The Examiner has made the full reference of record. Applicants respectfully request the Examiner consider the following comments with regard to the **full Mori et al. disclosure**.

To constitute anticipation, all material elements of a claim must be found in one prior art source. In re Marshall, 198 USPQ 344 (CAFC 1978). An inherent limitation is one that is necessarily present; invalidation based on inherency is not established by "probabilities or possibilities." Scaltech, Inc. v. Retec/Tetra, LLC, 51 U.S.P.Q.2d 1055, 1059 (Fed. Cir. 1999). Additionally, in order to sustain a finding of anticipation, the disclosure of a prior art reference must be adequate to enable possession of desired subject matter, and a reference that names or describes desired subject matter does not

anticipate if the subject matter cannot be produced without undue experimentation. Even if the claimed invention is disclosed in a printed publication, that disclosure will not suffice as prior art if it is not enabling. Elan v. Mayo Foundation, 68 USPQ2d 1373 (Fed.Cir. 2003).

The instant invention concerns a process for making pullulan/sodium alginate films. For the purposes of such process, the viscosity of the initial composition is thick enough for casting purposes, but the film obtained upon drying provides a solution of sufficiently low viscosity to rapidly dissolve and disperse in the mouth. Previously, such compositions had to be made of sufficient viscosity to ensure that they could be cast properly; however, upon drying, they produced a solution which had the same viscosity as the original composition and consequently dissolved very slowly in the mouth. By adjusting the viscosity in accordance with the present invention, Applicants have been able to overcome what was lacking in the prior art, *i.e.* sufficient viscosity for satisfactory casting, low viscosity of the resulting solution for rapid oral uptake.

To the best of Applicants' knowledge, this is the first time that a change in viscosity has been carried out during film preparation. The adjustment may be achieved by a number of means, *e.g.* volatilization of an acid component, buffering in the mouth, using enzymes, or irradiating with gamma-radiation. Claim 1, as amended, requires the hydrated polymer composition comprising pullulan and sodium alginate to have a *relatively high* viscosity suitable for casting. Claim 1, as amended, also requires the dosage form to be dried under such conditions as to provide a form which *gives a solution of relatively low viscosity that* rapidly dissolves and disperses in the mouth of the consumer. Thus, Claim 1 makes clear the viscosity of the composition prepared in step (a) is greater than that of the solution derived from the dried dosage form, *i.e.*, that having a viscosity suitable for casting means having a relatively high viscosity and providing a form which rapidly dissolves and disperses in the mouth of the consumer means that the solution derived from the dried dosage form has a relatively low viscosity.

Mori et al. disclose a process for improving the water resistance of pullulan articles by immersing them in, for example, CaCl₂. While the process is directed to the preparation of, *inter alia*, films and sheets, it is, by its very nature, *i.e.* to improve water-resistance, clearly not intended for the preparation of films for oral consumption.

Unlike Mori et al., the film resulting from the first two steps according to the present invention is dried *under such conditions* so as to provide a film which gives a solution of lower viscosity than the original composition. This is not taught by Mori et al. wherein the cast composition is not placed in the mouth so no comparison of viscosity is possible. In the unlikely event that it was, no reduction in the viscosity of the resulting solution would be expected as a result of CaCl₂ immersion.

Similar to Applicants' composition, the composition of Mori et al. comprises pullulan and sodium alginate. However, in stark contrast with Applicants' invention, Mori et al. do not teach nor do they suggest the necessity for the viscosity of the cast composition to be reduced in order to achieve rapid oral uptake.

Withdrawal of the rejections under 35 USC 102 in view of Mori et al. is respectfully requested.

Claims 1-6, 8-10 have been rejected under 35 USC 103 as being unpatentable over Leung et al. (WO 00/18365). Claims 9 and 10 have been rejected under 35 USC 103 as being unpatentable over Mori et al. The rejections are respectfully traversed.

In determining whether the subject matter as a whole is obvious, all evidence bearing on the subject must be considered, In re Wiggins, 158 USPQ 199 (CCPA 1968), including all differences, whatever their nature, between the subject matter sought to be patented and the prior art. In re Krazinski et al, 146 USPQ 25 (CCPA 1965), In re Rinehart, 189 USPQ 143 (CCPA 1976). Approaches to obviousness determinations which focus merely on identifying and tabulating "missing elements" in hindsight retrospect "imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge," and "fall victim to the insidious effect of hindsight syndrome where that which only the inventor taught is used against its teacher." Gore v. Garlock, 220 USPQ 303 (Fed. Cir. 1983). "One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." In re Fine, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

The question of nonobviousness is a simple one to ask, but difficult to answer . . . The difficulty which attaches to all honest attempts to answer this question can be attributed to the strong temptation to rely on hindsight while undertaking this evaluation. It

is wrong to use the patent in suite as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness . . .

The disclosure of Leung et al. relates to a consumable film comprising, *inter alia*, pullulan and sodium alginate, and an antimicrobial effective amount of an essential oil. However, while the composition of Leung et al. contains pullulan and sodium alginate, such composition does not undergo the vital third step of the present invention by which the viscosity of the solution derived from the cast composition is reduced to achieve rapid oral uptake. The Examiner states [f]urthermore, although Leuny et al., do not disclose the pH of their composition, the adjustment of the pH is a matter of choice and does not appear to affect the composition formed". With due respect, Applicants disagree. Volatilization of the acid component or buffering by saliva are specifically employed to raise the pH of the cast composition in order to provide a solution of reduced viscosity and enhanced oral uptake. Adjustment of the pH is not a "matter of choice" as stipulation of the initial pH in Claims 2, 4 and 7 and the final pH in Claim 6 clearly demonstrates.

In the rejection of the claims for obviousness over Mori et al., the Examiner states that "it is common and obvious to use or add enzymes that specifically catalyze the breakdown of substrates... that are constituents of consumable compositions as to facilitate the digestion of said substrates". Presumably, the Examiner is referring to the use of such enzymes in the preparation of, for example, soft-center chocolates. Such prior use, however, cannot be said to make obvious the present invention wherein the enzymes are employed to reduce the viscosity of the solution derived from a cast composition in order to improve its oral availability.

With respect to the rejection of claims 9 and 10 in view of Mori et al., Applicants submit that while gamma-irradiation is known for the "processing or sterilization of foods, consumables and the like", they are not aware of any teaching that such radiation may be used as a means for reducing the viscosity of the solution derived from a film in order to enhance its oral uptake.

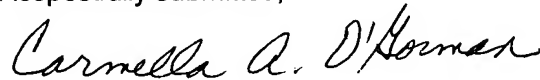
The cited references do not teach nor do they suggest the various combinations and manipulations that would be required, but are deemed obvious by the Examiner, to

arrive at the process disclosed herein. Withdrawal of all rejections under 35 USC 103 is requested.

In view of the instant amendments and comments, this application is believed to be in condition for allowance. Favorable consideration is respectfully requested.

The Commissioner is hereby authorized to charge any fees required under 37 C.F.R. §§ 1.16 and 1.17, or to credit any overpayment to Deposit Account No. 16-1445.

Respectfully submitted,



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